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DIFFERENCES IN THE LANGUAGE OF NEGRO AND WHITE GRADE-SCHOOL CHILDREN 1,2.

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AS REPORTED IN "DEVELOPMENTAL SOCIOLINGUISTICS--INNER CITY CHILDREN," ENTWISLE, 1968 (ED 011 611), INDIVIDUAL INTERVIEWS WERE CONDUCTED IN THE SLUMS OF BALTIMORE CITY WITH WHITE AND NEGRO ELEMENTARY SCHOOL CHILDREN AND IN SUBURBAN BALTIMORE WITH MIDDLE CLASS AND BLUE COLLAR CHILDREN. THIS SURVEY OF WORD ASSOCIATIONS REVEALED, CONTRARY TO EXPECTATION, THAT SLUM CHILDREN ARE APPARENTLY MORE ADVANCED LINGUISTICALLY THAN SUBURBAN CHILDREN AT FIRST GRADE IN TERMS OF PARADIGMATIC RESPONSES. BY THIRD GRADE, HOWEVER, THE FAVORABLE POSITION OF THE SLUM CHILD HAS ALTERED AND SUBURBAN CHILDREN LEAD ON ALL PARADIGMATIC MEASURES. THE FIRST-TO-THIRD GRADE DECLINE IN THE RELATIVE POSITION OF DISADVANTAGED CHILDREN OBVIOUSLY PARALLELS THE FAILURE OF THESE CHILDREN TO BECOME LITERATE EARLY IN THEIR SCHOOL CAREER. DIFFERENCES IN WORD ASSOCIATIONS PRESUMABLY REFLECT DIFFERENCES IN SEMANTIC STRUCTURE BETWEEN WHITE AND NEGRO CHILDREN AND COULD DEVELOP APART FROM, OR IN ADDITION TO, DIALECT DIFFERENCES, ESPECIALLY IN SEGREGATED ENVIRONMENTS. TO PROFIT FROM INSTRUCTION THE LEARNER MUST BRING MANY SKILLS TO THE CLASSROOM, ONE OF WHICH MAY BE A SEMANTIC SYSTEM CONGRUENT WITH THAT OF THE TEACHER OR TEXTBOOK AUTHORS. IN KINDERGARTEN AND FIRST GRADE IT APPEARS THAT WORD MEANINGS, AND THEREFORE THE COGNITIVE ROLE OF WORDS, IS VASTLY DIFFERENT FOR THE NEGRO AND WHITE CHILD. IT ALSO APPEARS THAT WHEREAS SUBURBAN CHILDREN ARE MAKING ORDERLY PROGRESS TOWARD EXPANDING THEIR SEMANTIC SYSTEMS TO EMBED LESS FREQUENT WORDS OVER THE ELEMENTARY SCHOOL YEARS, SLUM CHILDREN ARE MAKING LITTLE OR NO PROGRESS TOWARD USE OF LANGUAGE THAT IS CONCEPTUALLY MORE ELABORATE THAN WHAT THEY STARTED SCHOOL WITH. POSSIBLE REMEDIES INCLUDE SOME ADJUNCT USE OF TELEVISION IN THE EARLY GRADES AND SPECIFIC TRAINING ON WORD ASSOCIATES IN THE FORM OF ORAL GROUP GAMES LIKE THOSE FEATURED IN BEREITER'S PRE-SCHOOL CURRICULUM. WITH MORE DATA ON THE ACTUAL VOCABULARIES OF DISADVANTAGED CHILDREN, REVISED PRIMERS BASED ON THEIR RESPONSE STRENGTHS AND SEMANTIC STRUCTURES COULD ALSO BE PREPARED. (AUTHOR/JD)

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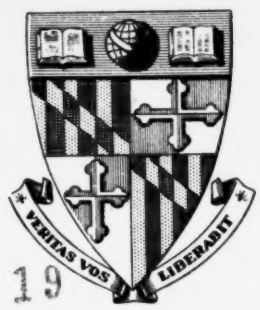

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THE JOHNS HOPKINS UNIVERSITY
THE CENTER FOR THE STUDY OF SOCIAL ORGANIZATION OF SCHOOLS

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DIFFERENCES IN THE LANGUAGE OF NEGRO AND WHITE GRADE-SCHOOL CHILDREN [1,2]

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Introduction

There appear to be wide differences in "educability" of children of the same IQ range drawn from different social classes or different subcultural groups (Jensen, 1968). Individual differences in cognitive style may depend, to a degree hitherto unappreciated, upon the individual's subcultural milieu. This paper presents data on differences in semantic systems and differences in linguistic development between subcultural groups, data which bear strongly on the cognitive style--educability problem.

A survey of word associations of Negro and white elementary school children reveals, contrary to expectation, that slum children are apparently more advanced linguistically than suburban children at first grade in terms of paradigmatic responses (Entwisle, 1968). (Paradigmatic responses are those with form class matching that of the stimulus. They increase markedly between kindergarten and fifth grade, and within age strata their prevalence is correlated positively with IQ (Entwisle, 1966).) White first-grade slum children of average IQ give paradigmatic responses to about the same extent as gifted (IQ 130) suburban children, and although disadvantaged Negro first-graders of average IQ lag behind disadvantaged white first-graders, they give <u>more</u> paradigmatic responses than white suburban first-graders of average IQ. Thus, at first

grade there is a relative superiority of the white over the Negro disadvantaged child when both are raised in the inner city, but the Negro slum child excels the white suburban child. The superiority is short-lived, however, for by third grade suburban children have surpassed the inner city children.

The relative positions of Negro and white slum children of the same tested IQ call for explanation. Many linguists suppose that the urban American Negro has a significantly different dialect from that of his white neighbor, possibly because of historical development of the Negro vernacular from Creole roots. It is not the intention of this paper to provide evidence on that issue. Rather this report concerns cognitive aspects of language and is concerned with the linguistic resources of different groups. Differences in word associations presumably reflect differences in semantic structure between white and Negro children and could develop apart from, or in addition to, dialect differences, especially in segregated environments. That this may be one consequence of segregation is suggested by recent evidence that Negro college students have different associative patterns from white college students (Belcher and Campbell, 1968).

A related but separate issue upon which this paper comments is the effect of racial differences between interviewers and respondents. Both white and Negro interviewers were used to elicit word associations from white and Negro

children. This has obvious analogies to inter-racial mixing in integrated schools and classrooms. Apparently effects of such mixing differ from one age to another, so different kinds of school organization might be optimal at different ages.

To what matters are word associations relevant? Norms of cultural free-associations for groups do reflect individual associative hierarchies as measured by probability of repetition (Silverstein, 1967), so that different associates or word associations of different strength for white and Negro children as groups imply different associative patterns for individual members of the two groups. Evidence exists that appropriate word associations are directly related to word recognition (O'Neil, 1953, Rouse and Vernis, 1963), to acquisition of syntax (Brown and Verko, 1960), to problem solving (Johnson, 1964), and especially to reading (Muehl, 1960). Word associations that are "different" reduce both speed and comprehension of reading, and interfere, perhaps on these grounds, with efficiency of taking multiple choice tests (Samuels, 1966). Word associations, then, are a means of describing cultural differences in language and thinking and a source of differences in performance on cognitive tasks.

Many reading primers and language workbooks are designed to capitalize upon high frequency words and associations between these words supposed to exist in the language habits of the "average" child. Lately efforts have been directed toward making story themes more appropriate for children of different

cultural and socioeconomic backgrounds, but as far as we know, no systematic notice has been taken of differing verbal habits or of differences in semantics among cultural groups that could hinder or aid the teaching of basic language skills in the elementary school. A large drawback to research on semantics is that there is no theoretical basis from which to begin. There is even no consensus concerning the range of phenomena for which a theory should be constructed (Miller, 1967). In fact, different semantic structures may be an important component of differences in educability among SES groups, as recently emphasized by Jensen (1968). To profit from instruction the learner must bring many skills to the classroom, and a semantic system congruent with that of the teacher or the textbook authors may be one crucial "skill". Associations can be shaped by training (Samuels, 1966)-- experimentally learned word associations have been shown to facilitate acquisition of reading responses. It is not too far-fetched then to imagine applying evidence like that presented below in a practical way.

Method

The procedure for gathering the data and the sample design are reported completely elsewhere (Entwisle, 1968). Briefly, individual interviews were conducted with white and Negro children who reside in the slums of Baltimore City. Equal numbers of children of each sex, each race, two IQ

levels (medium IQ (at or around 100) and low IQ (at or around 80)) and three grade levels (1, 3, 5) were individually interviewed by white and Negro interviewers, making a 2 x 2 x 2 x 3 x 2 design. All children responded to the same set of 96 stimulus words. These stimuli include several form classes (nouns, adjectives, verbs, adverbs, pronouns, miscellaneous), and within some form classes frequency is systematically varied. Kindergarten children could not be selected on IQ, but otherwise were selected and interviewed in the same way. We infer from data on first-grade children in the same schools attended by the kindergartners, that white kindergarten children in our samples probably have mean IQ about 76 and Negro children have mean IQ somewhat lower, around 70. Earlier (1961-1963) another study using the same procedures was carried out in the suburbs of Baltimore, providing comparable data for middle class and blue collar children.

Results

Several kinds of results are described separately below. (1) The Syntactic-Paradigmatic Shift - As already mentioned, first-grade Negro children have lower paradigmatic response rates than white slum children, but they have higher rates than white suburban children.[3] In particular the low IQ Negro

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3 (See Entwisle, 1966, p. 78 for a summary of paradigmatic percentages of suburban children grouped by grade, IQ and SES.)

exceeds the medium-IQ white suburban child (whether middle class or blue collar) in paradigmatic rates for pronouns, and exceeds low IQ blue collar children in paradigmatic rates for adjectives (24.3% vs. 21.7%). The medium-IQ inner city Negro first-grader is far ahead of the medium-IQ suburban child for adjectives (40% vs. about 30% for both middle class and blue collar). (Pronouns and adjectives are the two classes showing the largest changes around this age.) The Negro slum child also compares favorably on verbs (22.3% vs. 19.2% for low IQ, and 20.2% vs. 19.9% for medium IQ). Verbs would be expected to show small differences because paradigmatic rates for verbs are still low for all groups--they show changes later in the age-scale. By third grade, however, the favorable position of the slum child has altered and suburban children lead on all paradigmatic measures. (These data are presented completely elsewhere. The data for slum children only are given in Table 1.)

The next question concerns the syntactic-paradigmatic shift. Considerable data support the fact that word associations evolve through a syntagmatic-paradigmatic phase. A response word which normally follows a stimulus word syntactically (go--home) is replaced by a response-word that is a substitute for the stimulus word (go--went). With some subcultural groups whose pace of linguistic development is slowed, namely the Amish, syntagmatic responses disappear relatively slowly.

First, as shown in Table 2, there are negligible differences between white and Negro first-graders for three categories of syntagmatic responses (verbs followed by adverbs, nouns followed by verbs, and adjectives followed by nouns). (The kindergarten difference probably reflects more an IQ effect than a racial effect, but is consistent with the finding that delay in the shift implies a slower rate of development.) In comparing the slum children with the suburban children, one sees in every instance that the direction of changes noted between first and third-grade suburban children puts slum first-graders ahead of suburban first-graders. For example, nouns responded to with verbs decrease in suburban children between first and third grade (part of the syntactic-paradigmatic shift) and both white and Negro slum children are <u>lower</u> than the suburban children on this measure at first grade. Thus slum children of both racial groups appear to be further along the path of the syntactic-paradigmatic shift but about equal with respect to one another. One should bear in mind that the average IQ of the suburban children is at least 10 points higher. The shift away from syntagmatic responses, then, in Negroes and Whites is about the same, but the paradigmatic response rate is higher in white children.

(2) <u>Numbers of Different Responses</u> - Negroes give more different responses than Whites to the same stimulus. The increased variability of response is most apparent at first grade where in 67 out of 96 comparisons Negroes exceed whites.

(See Appendix A giving the number of different responses to each stimulus word by racial groups for three grade levels.) Furthermore, it is for words of highest frequency that the difference is most noticeable (see Table3). Paradigmatic rates follow this pattern for the two groups, and in some ways the two measures (number of different responses and paradigmatic rates) are complementary. For example to the stimulus word "table" 54 white first-graders and 52 Negro first-graders respond with a noun, but 10 more different nouns are given by Negro children (with 80 children in each group). This finding emerges over words of all form classes. Low level of commonality (low total percentage of responses accounted for by primary, secondary and tertiary associates) in other groups has pointed to (a) less mature individuals or (b) less educated individuals (Rosensweig, 1964).

(3) Semantic Systems - The most interesting differences are those between semantic systems. Appendix B gives the three most common responses for each stimulus word by race and by grade. If a stimulus word elicits an entirely different set of associations in one group from those it elicits in another group, the stimulus word can be considered to mean two different things. Tabulations of specific responses that occur with high frequency suggest that there may be wide differences in meaning for the same words, especially for younger children.

Racial differences are greatest for the youngest children. The word "color", for instance, yields "blue", "book",

and "yellow" for white kindergarten children as the three most frequent responses. None of these is present for Negro kindergarteners--their three high-frequency responses are "crayon", "coloring book", and "tolor". Similarly, while Negro and white first-graders' responses look more alike than kindergarteners', there are still rather remarkable differences between them. Comparison in terms of specific responses are difficult to make because the data are so voluminous, but two facts are outstanding:

(a) The number of nonsense or klang responses is far greater in the Negro first-graders. Using only the three most frequent responses to the 24 adjectives, and recalling that adjectives are rather well-developed by first grade, we note among Negro first-graders "mack", "bark", "mard", "nigh", "bong", "bean", "teasant", "mo", "mour", "birsty", plus some other words that are difficult to classify unambiguously but which are probably also nonsense or klang (like "hour" as a response to "sour"). Comparable responses made by white first-graders include only "hong". In other words, the 24 adjectives are, with one or two exceptions, already well on the way to being incorporated into the semantic systems of white children, but Negro youngsters are giving as high frequency responses a minimum of 11 nonsense responses to these 24 adjectives at first grade. The

reader will see the same patterns if he examines high-frequency responses to nouns ("sheep" yields "heap"), to adverbs ("mently" and "bently" are given to "gently"), to verbs ("bad", "fad", and "mad" are given to "add"). Even for pronouns, where responses of both racial groups consist almost exclusively of other pronouns, Negro children give "mit", "hen", "bus" and "must", while all responses of white children seem to be "English".

(b) In the second place, even when primary responses are identical, as for instance "hot" in response to "cold", the frequency for Negro children is markedly lower (34% vs. 13%). This comparison is more readily made among third-grade responses, because by then convergence toward a single high-frequency response has proceeded rather far. For 8 high-frequency adjectives the strength of the primary response in white children ranges from 46% to 71% whereas for Negro children corresponding figures are 34% to 58%.

The next question is: do slum groups differ in semantics from suburban children? Again, comparisons in terms of specific responses are awkward, but the overall impression is that white slum children possess semantic systems that overlap considerably with those of the suburban children at first grade. The differences already noted between disadvantaged white and

Negro first-graders then also separate the Negro slum child from the suburban child.

At third grade there are more synonyms given by suburban children, which is consistent of course with their greater production of paradigmatic responses, but also seems to reflect a much more mature kind of semantic structure. For example, to the high-frequency verb "tell" suburban children respond "ask" 11%, and "talk" 8%. White slum children respond "me" 12% and "told" 9%; and Negro slum children "well" 9% and "talk" 8%.

Differences between Negro and white responses to "black" are particularly interesting. No responses that pertain to human beings are given by white children, whereas Negro children respond "child", "girls", "hand", "man", and even "yes" to the stimulus word "black". Along the same lines the most frequent response among Negro third-graders to "sour" is "still good" (25%) and this response never occurs for white suburban children.

All responses given 10 or more times by any race-grade group have been compared across groups, but are not reproduced, because they do not add much information to that already given.

(4) Race of Interviewer - Paradigmatic rates for five form classes (neglecting frequency divisions) are given for first and third grade in Table 1 by interviewer groupings. (Fifth-grade responses show minimal differences, a finding consis-

tent with previous work with other groups (Entwisle, 1968) and so are omitted.) For first-grade effects of racial mixing (race of interviewer different from race of child) are not simple. However, if the relative magnitudes in Table 1 are compared, keeping IQ and race of child constant (20 comparisons possible), for average-IQ children 8 out of 10 comparisons favor white interviewers whether children are white or Negro. For low-IQ children, on the other hand, in 9 out of 10 comparisons a higher paradigmatic rate is elicited where race of child and race of interviewer differ, and Negro interviewers are much more effective with white children than white interviewers. As with medium-IQ Negro children, white interviewers are consistently more effective with low-IQ Negro children.

At third grade, for the same set of 20 comparisons, there is no consistent pattern for white children of either IQ level, and for Negro children in 9 out of 10 cases Negro interviewers are more effective, irrespective of IQ level. We do not have data that will permit isolation of effects of particular interviewers but the same interviewers were used in all three grades and across races. Thus, the same Negro interviewers saw both Negro and white children at all three grade levels, and it seems unlikely that differences between grades are owing to differences between interviewers.

(5) Factor analyses of responses to "butterfly list" words by race and grade - One way to study the meaning of a word to individuals is to examine the associates to a specific word. Following Deese (1962), if a list of related words is used to generate associates, associative overlap between words on the list can be factor analyzed. Words on the "butterfly list" such as butterfly, fly, wing, bird, etc. have a high probability of eliciting one another as associates. The factors extracted from these overlappings suggest how complex (or simple) the meaning of a word cluster may be, and how the words in the cluster relate to one another in factor composition. If the same list is used for children of different cultural groups and the children are sampled at several ages, it is possible to see how "meaning" of a word develops, perhaps differently in different groups. This procedure was used earlier (Entwisle, 1966, p. 104 ff) and it was concluded that Amish children develop somewhat differently from non-Amish children, a finding consistent with conclusions based on other kinds of data.

Appendix C lists factor loadings (over .09 in absolute value) for Negro and white children separately at grades K, 1, 3, and 5 for the fifteen words of the butterfly list. Factor I (flight) looks roughly similar to Negro and white groups. Factor II (bugs) has some dissimilarities, mostly the bug-insect grouping. Factor III (lepidoptera) loadings are consistent with this hypothesis, because white children have

higher loadings than Negroes. Factor IV (color) looks about the same for the two groups and since the K sample is small (40), one should probably ignore the different loadings on "black".

Comparing inner city children with suburban children on Factor I, one notes that there is a less mature pattern for third-grade slum children, although the two groups appear similar at first grade. Factors II, III, and IV do not show any appreciable city-suburban differences. On Factor V, "prettiness" has some suggestive small negative loadings on black for all white suburban children and all white slum children. By contrast, the loadings on "black", although small, are positive for all Negro children.

Altogether, the factor analyses of the butterfly list words do not show much difference between white and Negro slum children or between inner city and suburban children. This word list is probably not optimal to illustrate semantic systems in elementary school children, however, because many of the words on the list are low-frequency words that would be expected to yield small overlaps for young children. In addition, for analyses of this sort the number of children (40 at each level) is rather small. Further work is needed along these lines. (Some work done subsequently to that reported here (Miller, 1967, p. 67) on this same general word list suggests that a revised method of presentation, taking account of the multiple meanings of each word, and also cluster

analysis rather than factor analysis, may produce more meaningful results.)

Discussion

Analyses of word association responses suggest that inner city Negro children are somewhat behind inner city white children in pace of linguistic development when both are of the same measured IQ. The development of paradigmatic responses and the shift away from syntactic responses do not differ greatly. The relative position of the two groups in the general population, however, is not generally as favorable as our results suggest, because a greater proportion of Negroes have lower IQ's. Our own estimate of unselected first-graders suggests a group difference of 6 - 10 points. Overall, then, the typical inner city Negro child is probably rather far behind the typical white child, as the kindergarten data for children unselected on IQ suggest.

There are far-reaching differences in semantic structures between Negro and white disadvantaged children, notwithstanding the similarities mentioned above. For kindergarten children almost no responses were held in common by the two racial groups, and these are the children whose reading readiness and other verbal behaviors are being shaped for beginning reading instruction in the first grade. Differences in semantics may be of much greater importance than lags in development, because on our measures, suburban

children are also behind the average-IQ inner city child at first grade and yet by third grade these suburban children have advanced tremendously. The inner city Negro children have semantic systems more convergent with white systems by third grade than at first grade, but even for groups of matched IQ like those in Appendix B, specific responses and particularly response strengths are widely different.

The first-to-third grade decline in the relative position of disadvantaged children obviously parallels the failure of these children to become literate early in their school career. One can only speculate about the practical effects of the different semantic systems but for words like "never" that are evolving over the elementary school period "always" is the response for 14% of white suburban children, 8% of white slum children and 2% of Negro slum children. Or, to take another example, white suburban children give "listen" as the primary response to "obey" and this response is not among the first three responses for either white or Negro slum children.

This also raises the issue, somewhat tardily, of the reliability of associates--for example, if two separate groups of suburban children were interviewed, to what extent would their associates be the same? Is variation within groups as large as the variation noted here between groups? The reliability of associates (shown by way of internal consistency when groups are broken down by sex) is high, especially for associates that occur at rates of 10% or more, and there is

considerable correspondence for words with rates below 10%. In no case for suburban first-graders, in fact, is a word occurring at or above a rate of 10% not consistent for boys and girls, and many others below that rate are consistent. This consistency between sexes composing a larger sample occurs even though sex differences in word associations are often pointed to, and would be expected--"pants" is a more frequent response to "long" for boys than for girls, for instance. Other investigators (Tillman and Williams, 1968) cite reliabilities over .90 for associations over all form classes.

One can only wonder how much these differing semantic systems becloud current research as well as the educational task--for if Goulet's (1968) recommendations to use paired associates (PA), in studying developmental learning processes are heeded, but no account is taken of the differing associative and semantic properties of the PA words, then the learning processes described may be as much a function of group differences in semantics as anything else.

The data reported here present just a glimmer of what the actual problem must be. Miller (1951, p. 149) guesses that the "average" child in the first grade recognizes almost 24,000 basic and derivative words. If we take the conservative view that the disadvantaged child's vocabulary is constricted to 12,000 words (it may actually be expanded), then we have sampled about 1% of it. Also we have not touched on morphol-

ogy, syntax, or phonology, also known to be deficient in disadvantaged groups. In kindergarten and first grade it appears that word meanings, and therefore the cognitive role of words, is vastly different for the Negro and white child. It also appears that whereas suburban children are making orderly progress toward expanding their semantic systems to imbed less frequent words over the elementary school years, slum children are making little or no progress toward use of language that is conceptually more elaborate than what they started school with ("maintain" produces "can", "retain", and "begin" for suburban third-graders, but "no response" is the most frequent response in both white and Negro slum children; "seldom" gives "often" (7.5%) and "always" (5%) in suburban third-graders but gives "sell" and "no response" as the two most frequent associates in both white and Negro slum-dwellers).

Remedies are not obvious. Aside from what occurs in the motivational and affective domains, and we do not wish to discuss this here although we acknowledge its possibly overriding importance, it is clear that over the early school years the suburban child is engaged in rapid linguistic development on several fronts. The disadvantaged child, from what appears to be a more favored initial position, seems to decelerate his rate of language development. Several kinds of action are possible, the first being some adjunct use of television in the early grades since we presume that TV is

responsible for the impressive pre-school development of slum children and the children apparently attend well to verbal material presented in this manner. Secondly, specific training on word associates in the form of oral group games like those featured in Bereiter's pre-school curriculum may have value in enriching and consolidating associative structures. Third, if more data on the actual vocabularies of disadvantaged children were available, revised primers based on their response strengths and semantic structures could be prepared. It is important to emphasize here that eventually the aim is for children to acquire standard English, and although revised primers might seem opposed to that, in fact we do not believe they would be. They would, instead, increase the chances that the first and second grader might "crack the code" and experience more success in beginning reading. It would be a simple step to shape his reading toward standard English after he had once become skillful at it.

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Table 1. Percentages of Paradigmatic Responses, Inner City Children, Baltimore, Md., 1965-66

	White Children					Negro Children				
	White Int.		Negro Int.		Aver.	Negro Int.		White Int.		Aver.
	Med. IQ	Low IQ	Med. IQ	Low IQ	White	Med. IQ	Low IQ	Med. IQ	Low IQ	Negro
					First Grade					
Nouns	62.7	60.0	52.3	65.6	60.1	57.7	46.0	56.7	57.3	54.4
Adjectives	45.8	32.7	46.0	35.2	39.9	38.1	21.7	39.8	26.9	31.6
Verbs	27.3	23.5	24.6	23.1	24.6	17.3	19.8	23.1	24.8	21.3
Adverbs	28.7	10.6	25.0	19.4	20.9	13.7	11.3	18.1	13.1	14.1
Pronouns	51.3	28.1	40.0	36.3	38.9	33.1	26.9	41.9	35.0	34.2
					Third Grade					
Nouns	73.3	71.7	81.0	69.2	73.8	72.7	64.2	72.3	63.1	68.1
Adjectives	63.7	64.2	74.4	64.2	66.6	67.3	60.2	60.0	49.8	59.3
Verbs	38.5	37.9	37.7	31.5	36.4	41.5	29.6	35.8	32.9	35.0
Adverbs	44.4	35.6	36.9	43.7	40.2	38.1	30.6	31.9	30.0	32.7
Pronouns	66.9	65.0	72.5	63.1	66.9	75.0	63.1	65.0	58.7	65.5

Table 2. Syntactic Responses in Percents

		Stimulus Word / Response Word	Verbs / Adverbs	Nouns / Verbs	Adjectives / Nouns
Slum Children					
Kindergarten	White		6.5	21.1	46.5
	Negro		3.8	12.4	55.3
First Grade	White		7.5	15.5	34.0
	Negro		7.5	14.7	35.0
Suburban Children (combined middle class and blue collar, all white)					
First Grade			7.3	18.9	44.1
Third Grade			8.6	13.6	18.3

Table 3. Number of Different Responses (out of 640) by Form-Class Frequency Groups

	First Grade		Third Grade		Fifth Grade	
	Negro	White	Negro	White	Negro	White
Nouns						
high frequency	407	367	280	249	191	179
med. frequency	408	365	260	248	163	156
low frequency	464	457	359	340	222	187
Adjectives						
high frequency	419	343	208	176	102	89
med. frequency	397	380	255	263	186	179
low frequency	428	396	277	273	152	160
Verbs						
high frequency	447	438	363	311	235	194
med. frequency	511	495	462	435	354	355
low frequency	511	505	450	442	338	348
Adverbs	517	487	388	385	297	286
Pronouns	394	377	220	235	156	137
Miscellaneous	457	421	312	315	231	220

Appendix A

Number of Different Responses by Race and Grade (N = 80)

Stimulus Word	First Grade N	First Grade W	Third Grade N	Third Grade W	Fifth Grade N	Fifth Grade W
Bird	52	42	38	24	26	30
Color	54	50	34	34	23	26
Flower	52	52	37	41	38	32
Fly	54	43	47	41	30	25
Hand	52	59	44	42	29	27
Man	39	35	21	20	17	14
River	56	49	35	27	16	15
Table	48	37	24	20	12	10
Totals	407	367	280	249	191	179
Chair	52	49	34	25	15	16
Fruit	49	48	33	33	20	18
Music	62	48	44	47	36	31
Ocean	47	41	26	21	14	12
Salt	51	37	23	23	19	22
Sheep	45	51	31	35	21	21
Square	51	44	30	29	18	15
Wing	51	47	39	35	20	21
Totals	408	365	260	248	163	156
Bee	61	56	45	43	31	23
Bug	58	54	36	34	22	17
Butterfly	49	41	39	33	18	22
Cocoon	56	59	43	49	40	31
Insect	61	57	42	42	20	23
Moth	71	67	60	51	29	21
Needle	54	59	45	32	19	19
Net	54	64	49	56	43	31
Totals	464	457	359	340	222	187
Black	51	38	25	25	14	7
Cold	48	36	20	17	8	8
Dark	44	41	20	13	10	10
Hard	53	51	27	24	17	13
High	59	47	38	30	21	14
Long	60	50	32	23	10	17
Pretty	56	45	24	28	13	10
Short	48	35	22	16	9	10
Totals	419	343	208	176	102	89

Stimulus Word	First Grade N	W	Third Grade N	W	Fifth Grade N	W
Bright	41	46	29	30	19	20
Clean	56	45	25	30	20	14
Loud	53	47	31	27	18	17
Pleasant	61	70	54	57	40	40
Sad	31	41	16	24	9	12
Tall	43	35	28	19	14	14
Wild	61	63	50	57	46	40
Yellow	51	33	22	19	20	22
Totals	397	380	255	263	186	179
Bitter	58	57	45	45	19	31
Quiet	58	51	28	28	15	15
Rough	46	52	34	36	16	20
Slow	44	37	18	15	5	7
Smooth	60	50	35	31	27	17
Sour	56	52	36	33	16	14
Swift	67	63	60	64	39	43
Thirsty	39	34	21	21	15	13
Totals	428	396	277	273	152	160
Add	61	63	35	29	19	22
Begin	68	61	54	50	27	18
Carry	64	61	57	48	43	33
Give	56	58	54	51	31	24
Move	64	64	60	46	45	35
Run	37	39	27	22	20	16
Sit	41	31	27	17	13	11
Tell	56	61	49	48	37	35
Totals	447	438	363	311	235	194
Allow	61	67	64	57	60	51
Belong	66	64	61	59	56	48
Enjoy		54	62	53	41	68
Happen	61	61	62	58	53	55
Join	69	63	54	54	42	43
Listen	63	60	37	41	33	26
Prepare	71	61	70	62	36	33
Sell	56	65	52	51	33	31
Totals	447	495	462	435	354	355

Stimulus Word	First Grade N	First Grade W	Third Grade N	Third Grade W	Fifth Grade N	Fifth Grade W
Deceive	64	72	58	60	43	47
Examine	70	68	60	50	30	35
Gallop	53	49	41	39	23	19
Inquire	63	60	58	59	56	57
Maintain	71	72	62	70	57	64
Mix	58	54	54	50	41	40
Obey	65	65	59	50	45	42
Restore	67	65	58	64	43	44
Totals	511	505	450	442	338	348
Always	73	66	58	62	46	40
Gently	62	61	53	41	30	31
Loudly	57	49	31	39	28	22
Never	66	61	54	51	34	42
Seldom	70	69	66	69	59	55
Slowly	52	41	21	23	17	18
Sometimes	64	70	50	45	39	34
Usually	73	70	55	55	44	44
Totals	517	487	388	385	297	286
He	46	41	16	16	13	9
Her	49	41	19	23	12	11
Him	52	44	22	24	14	14
It	53	47	33	49	38	30
She	42	41	15	16	7	8
Them	57	58	33	37	22	28
They	54	60	47	41	26	19
Us	41	45	35	29	24	18
Totals	394	377	220	235	156	137
Because	65	57	60	60	51	49
Between	63	57	54	53	40	38
Into	58	57	37	30	25	29
Off	61	46	20	15	6	6
On	50	50	26	28	15	11
Once	61	60	44	51	32	31
Since	67	71	63	68	55	49
Up	32	23	8	10	7	7
Totals	457	421	312	315	231	220

Appendix B

Three Most Popular Responses in Percentages for First Graders

Stimulus Word	Response (Negro)		Response (white)	
Add	bad	05.0	take away	05.0
	fad	05.0	one	03.8
	mad	05.0	a word	02.5
Allow	soft	13.8	not allow	07.5
	pow	05.0	soft	06.3
	talk	03.8	allowance	02.5
Always	do	06.3	not	05.0
	eat	02.5	never	03.8
	never	02.5	not always	03.8
Because	cause	06.3	I	06.3
	I	06.3	why	06.3
	we	05.0	you	06.3
Bee	fly	05.0	a	05.0
	she	05.0	fly	05.0
	he	03.8	see	05.0
Begin	end	05.0	after	07.5
	like	03.8	eat	06.3
	after	02.5	work	06.3
Belong	long	06.3	be short	05.0
	here	03.8	here	03.8
	to	03.8	in	03.8
Between	me	05.0	after	13.8
	here	03.8	middle	03.8
	bed	03.8	you	03.8
Bird	fly	17.5	fly	31.3
	nest	10.0	nest	07.5
	fird	03.8	wing	06.3
Bitter	like you bury something	06.3	good	07.5
	bit	05.0	bit	06.3
	bad	03.8	bite	03.8

First Grade

Stimulus Word	Response (Negro)		Response (white)	
Black	white	11.3	white	18.8
	mack	06.3	brown	13.8
	cat	06.3	blue	11.3
Bright	light	35.0	dark	20.0
	might	06.3	light	10.0
	day	03.8	sun	07.5
Bug	mug	06.3	butterfly	06.3
	insect	05.0	insect	06.3
	fly	03.8	water bug	06.3
Butterfly	butter	07.5	fly	20.0
	flower	05.0	bird	15.0
	bee	02.5	bee	07.5
Carry	marry	07.5	baby	08.8
	carriage	03.8	not carry	05.0
	carrot	03.8	heavy	03.8
Chair	bear	08.8	sit	12.5
	sit	08.8	table	11.3
	table	06.3	couch	07.5
Clean	dirty	11.3	dirty	27.5
	mean	08.8	floor	06.3
	bean	05.0	wash	06.3
Cocoon	raccoon	12.5	raccoon	06.3
	coon	08.8	bear	03.8
	rat	05.0	dog	03.8
Cold	hot	12.5	hot	33.8
	warm	12.5	warm	18.8
	coat	05.0	wind	05.0
Color	red	15.0	red	13.8
	black	05.0	book	05.0
	brown	05.0	black	03.8
Dark	light	15.0	light	35.0
	bark	08.8	night	07.5
	day	07.5	morning	07.5

First Grade

Stimulus Word	Response (Negro)		Response (white)	
Deceive	no response	05.0	see	06.3
	read	03.8	grass	02.5
	receive	03.8	look	02.5
Enjoy			fun	10.0
			happy	10.0
			not enjoy	03.8
Examine	doctor	05.0	doctor	07.5
	egg	02.5	book	02.5
	girl	02.5	cow	02.5
Flower	rose	07.5	grass	12.5
	grass	06.3	rose	06.3
	grow	06.3	fly	05.0
Fly	I	07.5	bird	11.3
	bee	06.3	butterfly	08.8
	bird	05.0	down	07.5
Fruit	apple	11.3	apple	16.3
	toot	07.5	sour	06.3
	vegetable	06.3	vegetable	06.3
Gallop	horse	16.3	horse	28.8
	hallop	03.8	around	03.8
	horsey	03.8	ride	03.8
Gently	mently	06.3	soft	08.8
	bently	03.8	cat	05.0
	move	03.8	dog	03.8
Give	away	07.5	something	07.5
	live	05.0	me	06.3
	present	03.8	gift	03.8
Hand	can	08.8	fingers	10.0
	fan	07.5	arm	06.3
	fingers	07.5	finger	06.3
Happen	happy	10.0	happy	06.3
	hat	05.0	not happen	05.0
	sappen	02.5	sad	05.0

First Grade

Stimulus Word	Response (Negro)		Response (white)	
Hard	soft	17.5	soft	22.5
	mard	05.0	work	07.5
	work	05.0	easy	03.8
He	she	16.3	her	18.8
	me	08.8	she	15.0
	we	07.5	me	06.3
Her	she	11.3	he	17.5
	him	08.8	him	16.3
	girl	06.3	she	11.3
High	low	08.8	low	17.5
	bye	07.5	bye	12.5
	nigh	05.0	sky	05.0
Him	her	08.8	her	28.8
	them	07.5	you	05.0
	boy	06.3	boy	03.8
Inquire	quiet	11.3	quiet	07.5
	wire	05.0	no response	06.3
	loud	03.8	wire	06.3
Insect	butterfly	10.0	bug	11.3
	ant	05.0	out	05.0
	in	05.0	outsect	03.8
Into	Indian	07.5	out	11.3
	to	06.3	one	05.0
	you	05.0	house	03.8
It	is	13.8	is	22.5
	hit	06.3	at	07.5
	mit	05.0	not	03.8
Join	go	03.8	play	06.3
	come	02.5	happy	03.8
	born	02.5	in	03.8
Listen	hear	07.5	hear	08.8
	to me	06.3	quiet	05.0
	misten	03.8	to me	05.0

First Grade

Stimulus Word	Response (Negro)		Response (white)	
Long	short	13.8	short	30.0
	time	05.0	bed	02.5
	bong	03.8	hong	02.5
Loud	soft	13.8	low	12.5
	cloud	06.3	quiet	05.0
	low	05.0	holler	03.8
Loudly	softly	08.8	softly	13.8
	somebody			
	scream	08.8	slowly	06.3
	pole	03.8	soft	06.3
Maintain	main	03.8	no response	06.3
	man	03.8	not maintain	03.8
	men	02.5	water	03.8
Man	woman	11.3	woman	25.0
	lady	11.3	lady	12.5
	fan	10.0	father	06.3
Mix	cake	10.0	cake	17.5
	pix	06.3	bake	05.0
	mitten	03.8	a cake	03.8
Moth	loft	03.8	butterfly	07.5
	ball	02.5	cloth	03.8
	march	02.5	mother	03.8
Move	coove	03.8	still	05.0
	here	03.8	smooth	03.8
	stop	03.8	stop	03.8
Music	dance	07.5	sing	08.8
	play	05.0	dance	07.5
	loud	03.8	song	07.5
Needle	thread	07.5	thread	07.5
	stick	06.3	pin	05.0
	ouch	05.0	sew	05.0
Net	set	07.5	bird	06.3
	pet	06.3	house	03.8
	nest	06.3	not net	03.8

First Grade

Stimulus Word	Response (Negro)		Response (white)	
Never	evergreen	06.3	ever	10.0
	do anything	05.0	again	05.0
	again	02.5	not	05.0
Obey	bad	07.5	orders	05.0
	okay	05.0	good	03.8
	bay	03.8	order	03.8
Ocean	water	13.8	water	26.3
	lotion	10.0	sea	11.3
	boat	06.3	city	06.3
Off	on	12.5	on	38.8
	coat	05.0	in	03.8
	cow	03.8	go	02.5
On	off	13.8	off	31.0
	orange	06.3	go	03.8
	clothes	05.0	out	03.8
Once	none	06.3	two	07.5
	twice	06.3	one	06.3
	boy	03.8	twice	05.0
Pleasant	present	12.5	dreams	03.8
	dream	06.3	good	03.8
	teasant	03.8	birthday	02.5
Prepare	a pear	03.8	pare	07.5
	hair	03.8	pear	05.0
	pair	02.5	apple	03.8
Pretty	ugly	10.0	ugly	25.0
	nice	07.5	flowers	07.5
	beautiful	03.8	flower	03.8
Quiet	loud	18.8	loud	25.0
	near	03.8	be quiet	05.0
	be quiet	02.5	noisy	03.8
Restore	stop	08.8	store	12.5
	boy	06.3	food	03.8
	house	03.8	house	03.8

First Grade

Stimulus Word	Response (Negro)		Response (white)	
River	water	15.0	water	26.3
	ocean	03.8	boat	05.0
	swim	03.8	ocean	05.0
Rough	tough	38.8	soft	11.3
	hard	03.8	tough	10.0
	cat	02.5	dog	05.0
Run	fast	20.0	play	15.0
	walk	10.0	stop	10.0
	bun	07.5	play	06.3
Sad	mad	28.8	happy	40.0
	happy	16.3	mad	05.0
	bad	10.0	glad	03.8
Salt	pepper	26.3	pepper	50.0
	malt	03.8	hot	03.8
	bought	02.5	food	02.5
Seldom	meldom	05.0	no response	03.8
	sell	03.8	not seldom	03.8
	beldom	02.5	book	02.5
Sell	food	08.8	buy	06.3
	listen	07.5	something	06.3
	this	06.3	food	03.8
She	he	25.0	he	20.0
	me	07.5	him	15.0
	girl	05.0	girl	05.0
Sheep	lamb	22.5	lamb	18.8
	deep	05.0	dog	07.5
	heap	05.0	cow	05.0
Short	big	13.8	long	20.0
	little	12.5	big	12.5
	tall	07.5	tall	11.3
Since	mince	06.3	when	05.0
	dense	03.8	we	03.8
	fence	02.5	brains	02.5

First Grade

Stimulus Word	Response (Negro)		Response (white)	
Sit	down	25.0	down	32.5
	mit	06.3	stand	17.5
	bit	05.0	chair	07.5
Slow	fast	27.5	fast	51.3
	mo	05.0	car	02.5
	go	05.0	slowly	02.5
Slowly	fast	25.0	fast	40.0
	snow	05.0	fastly	06.3
	fastly	03.8	walk	06.3
Smooth	soft	16.3	soft	27.5
	hard	05.0	hard	08.8
	move	03.8	clothes	02.5
Sometimes	something	07.5	some	03.8
	summer	07.5	someday	03.8
	all the time	03.8	always	02.5
Sour	lemon	12.5	lemon	11.3
	hour	03.8	milk	07.5
	mour	03.8	good	06.3
Square	triangle	11.3	triangle	12.5
	block	10.0	box	10.0
	bear	17.5	round	07.5
Swift	sweep	07.5	swim	10.0
	broom	02.5	is	03.8
	hit	02.5	sweep	03.8
Table	chair	17.5	chair	40.0
	marble	11.3	chairs	06.3
	desk	05.0	eat	06.3
Tall	ball	11.3	small	20.0
	small	10.0	little	16.3
	large	08.8	short	16.3
Tell	bell	05.0	me	08.8
	mell	05.0	you	05.0
	mother	05.0	hell	03.8

First Grade

Stimulus Word	Response (Negro)		Response (white)	
Them	they	17.5	they	23.8
	him	12.5	him	13.8
	us	07.5	me	05.0
They	them	28.8	them	18.8
	their	06.3	him	06.3
	her	05.0	their	05.0
Thirsty	water	45.0	water	32.5
	drink	03.8	drink	16.3
	birsty	02.5	hungry	06.3
Up	down	55.0	down	72.5
	cup	06.3	ace	01.3
	us	02.5	airplane	01.3
Us	we	20.0	you	12.5
	bus	10.0	me	05.0
	must	06.3	people	05.0
Usually	use	03.8	not usually	05.0
	you	03.8	you	05.0
	always	02.5	not	03.8
Wild	animal	07.5	animal	07.5
	mean	05.0	cat	06.3
	cat	03.8	not wild	06.3
Wing	fly	16.3	fly	17.5
	king	05.0	bird	17.5
	bird	05.0	airplane	02.5
Yellow	blue	07.5	blue	17.5
	color	06.3	green	11.3
	green	05.0	white	08.8

Appendix B

Three Most Popular Responses in Percentages for Third Graders

Stimulus Word	Response (Negro)		Response (white)	
Add	subtract	36.3	subtract	48.8
	an	03.8	take away	08.8
	numbers	03.8	arithmetic	03.8
Allow	soft	08.8	not allowed	05.0
	quiet	06.3	soft	05.0
	low	03.8	not allow	03.8
Always	sometimes	07.5	sometimes	08.8
	not always	05.0	because	03.8
	again	03.8	never	03.8
Because	before	06.3	why	06.3
	he	05.0	not because	05.0
	not because	03.8	always	03.8
Bee	butterfly	10.0	sting	13.8
	fly	06.3	butterfly	07.5
	insect	06.3	bumble bee	06.3
Begin	start	11.3	start	12.5
	end	06.3	end	08.8
	after	05.0	after	07.5
Belong	to	06.3	not belong	05.0
	below	05.0	to	05.0
	beside	03.8	him	03.8
Between	middle	11.3	middle	13.8
	us	05.0	behind	05.0
	after	03.8	together	05.0
Bird	fly	17.5	fly	23.8
	nest	10.0	nest	11.3
	robin	10.0	dog	07.5
Bitter	sweet	15.0	butter	07.5
	sour	11.3	sour	07.5
	bad	06.3	better	06.3
Black	white	43.8	white	61.3
	blue	08.8	blue	05.0
	color	06.3	brown	02.5

Third Grade

Stimulus Word	Response (Negro)		Response (white)	
Bright	light	37.5	lights	33.8
	dark	17.5	dark	20.0
	night	06.3	sun	05.0
Bug	insect	28.8	fly	16.3
	roach	07.5	roach	11.3
	ant	06.3	bee	08.8
Butterfly	fly	17.5	fly	20.0
	bee	08.8	bee	15.0
	bird	08.8	bird	15.0
Carry	bring	06.3	drop	12.5
	drop	06.3	hold	08.8
	bag	03.8	heavy	07.5
Chair	table	22.5	table	17.5
	sit	15.0	sit	16.3
	seat	07.5	seat	13.8
Clean	dirty	66.3	dirty	56.3
	house	02.5	dirt	06.3
	tean	02.5	wash	02.5
Cocoon	raccoon	17.5	raccoon	15.0
	animal	12.5	animal	08.8
	butterfly	05.0	squirrel	06.3
Cold	hot	42.5	hot	51.3
	warm	32.5	warm	28.8
	cool	02.5	freeze	02.5
Color	blue	16.3	red	15.0
	red	12.5	blue	13.8
	brown	07.5	black	08.8
Dark	light	46.3	light	68.8
	day	17.5	day	08.8
	morning	07.5	night	06.3
Deceive	letter	10.0	receive	08.8
	no response	06.3	letter	05.0
	receive	06.3	no response	05.0

Third Grade

Stimulus Word	Response (Negro)		Response (white)	
Enjoy	fun	06.3	happy	12.5
	happy	06.3	good	08.8
	like	05.0	not enjoy	03.8
Examine	doctor	07.5	doctor	13.8
	operate	06.3	operate	08.8
	nurse	03.8	x-ray	06.3
Flower	garden	15.0	rose	23.8
	grass	11.3	grass	07.5
	rose	11.3	garden	06.3
Fly	walk	13.8	walk	11.3
	bee	10.0	bee	08.8
	bird	05.0	high	07.5
Fruit	vegetable	27.5	vegetable	17.5
	apple	17.5	apple	18.8
	orange	07.5	orange	07.5
Gallop	horse	32.5	horse	28.8
	run	05.0	run	07.5
	horsey	05.0	walk	07.5
Gently	soft	15.0	soft	16.3
	nice	06.3	nice	12.5
	hard	05.0	kind	07.5
Give	gave	12.5	gave	15.0
	take	10.0	take	11.3
	gift	05.0	me	03.8
Hand	arm	12.5	arm	16.3
	finger	07.5	foot	11.3
	feet	06.3	feet	07.5
Happen	happy	08.8	happy	08.8
	before	03.8	before	03.8
	something	03.8	didn't happen	03.8
Hard	soft	53.8	soft	56.3
	easy	10.0	easy	12.5
	work	06.3	work	03.8

Third Grade

Stimulus Word	Response (Negro)		Response (white)	
He	she	33.8	her	35.0
	him	10.0	she	31.3
	me	10.0	him	10.0
Her	him	38.8	him	48.8
	she	20.0	he	18.8
	he	18.8	she	06.3
High	low	37.5	low	55.0
	bye	10.0	good bye	05.0
	hello	05.0	by	02.5
Him	her	38.8	her	52.5
	she	12.5	she	07.5
	he	08.8	them	06.3
Inquire	no response	07.5	sing	07.5
	in	05.0	not inquire	05.0
	loud	05.0	quiet	05.0
Insect	butterfly	25.0	bug	28.8
	animal	08.8	fly	11.3
	bite	06.3	animal	03.8
Into	out	41.3	out	42.5
	out to	06.3	out to	12.5
	in	03.8	house	03.8
It	is	37.5	is	13.8
	at	08.8	that	10.0
	not	05.0	at	05.0
Join	together	12.5	together	11.3
	club	07.5	club	07.5
	coin	03.8	fun	03.8
Listen	quiet	18.8	hear	17.5
	heard	07.5	quietly	15.0
	carefully	06.3	good	05.0
Long	short	57.5	short	71.3
	song	02.5	line	02.5
	time	02.5	after	01.3
Loud	soft	30.0	soft	25.0
	quiet	13.8	low	23.8
	low	11.3	quiet	13.8

Third Grade

Stimulus Word	Response (Negro)		Response (white)	
Loudly	softly	20.0	softly	12.5
	soft	12.5	quietly	08.8
	quiet	11.3	slowly	06.3
Maintain	no response	11.3	no response	05.0
	man	08.8	water	03.8
	tain	03.8	boy	02.5
Man	woman	50.0	woman	66.3
	lady	10.0	lady	08.8
	can	06.3	boy	02.5
Mix	blend	13.8	cake	20.0
	make	06.3	stir	11.3
	fix	05.0	flour	03.8
Moth	butterfly	06.3	butterfly	18.8
	mother	05.0	bug	06.3
	fly	05.0	fly	05.0
Move	stay	06.3	stay	20.0
	didn't move	03.8	still	06.3
	go	03.8	stop	06.3
Music	song	13.8	song	08.8
	dance	07.5	singing	07.5
	sing	07.5	sing	06.3
Needle	thread	18.8	pin	26.3
	stick	06.3	thread	23.8
	sew	05.0	hurt	05.0
Net	bet	08.8	fish	12.5
	fish	07.5	catch	08.8
	bird	05.0	bet	05.0
Never	ever	20.0	ever	16.3
	again	05.0	again	08.8
	always	02.5	always	07.5
Obey	do	06.3	manners	11.3
	not obey	05.0	rules	11.3
	good	03.8	now	06.3

Third Grade

Stimulus Word	Response (Negro)		Response (white)	
Ocean	river	32.5	sea	28.8
	sea	22.5	river	25.0
	water	11.3	water	16.3
Off	on	73.8	on	81.3
	go	02.5	go	02.5
	over	02.5	bat	01.3
On	off	62.5	off	66.3
	clothes	03.8	all the time	01.3
	no	02.5	at	01.3
Once	twice	22.5	twice	16.3
	again	07.5	one	06.3
	one	06.3	time	06.3
Pleasant	please	06.3	nice	07.5
	day	06.3	unpleasant	06.3
	play	05.0	happy	05.0
Prepare	unprepare	05.0	fix	06.3
	pare	03.8	ready	05.0
	repair	03.8	unprepare	05.0
Pretty	ugly	57.5	ugly	46.3
	beautiful	11.3	beautiful	13.8
	cute	03.8	nice	07.5
Quiet	loud	26.3	loud	37.5
	noise	17.5	noise	20.0
	noisy	16.3	sound	06.3
Restore	floor	10.0	food	06.3
	store	06.3	store	06.3
	market	03.8	house	03.8
River	water	20.0	lake	17.5
	lake	12.5	water	18.8
	ocean	06.3	ocean	11.3
Rough	tough	38.8	hard	17.5
	wild	06.3	tough	15.0
	hard	05.0	soft	11.3

Third Grade

Stimulus Word	Response (Negro)		Response (white)	
Run	walk	35.0	walk	35.0
	stop	10.0	stop	12.5
	ran	07.5	fast	08.8
Sad	happy	50.0	happy	60.0
	mad	17.5	glad	08.8
	glad	11.3	had	02.5
Salt	pepper	60.0	pepper	61.3
	sugar	08.8	water	06.3
	balt	02.5	shaker	05.0
Seldom	sell	07.5	sell	07.5
	no response	03.8	no response	03.8
	feldom	02.5	always	02.5
Sell	buy	12.5	buy	11.3
	mell	05.0	sold	10.0
	well	05.0	bell	06.3
She	he	46.3	he	41.3
	her	17.5	her	23.8
	him	16.3	him	15.0
Sheep	lamb	32.5	lamb	32.5
	wool	08.8	dog	10.0
	animal	07.5	cow	08.8
Short	long	33.8	long	52.5
	tall	22.5	tall	11.3
	big	06.3	big	08.8
Since	money	10.0	then	05.0
	dumb	03.8	money	03.8
	five	02.5	now	03.8
Sit	down	31.3	stand	33.8
	stand	17.5	down	22.5
	chair	07.5	sat	12.5
Slow	fast	76.3	fast	78.8
	go	02.5	rain	05.0
	snow	02.5	band	01.3

Third Grade

Stimulus Word	Response (Negro)		Response (white)	
Slowly	fast	57.5	fast	57.5
	fastly	15.0	fastly	10.0
	faster	02.5	faster	06.3
Smooth	soft	28.8	soft	33.8
	hard	08.8	hard	16.3
	gently	03.8	rough	12.5
Sometimes	all the time	10.0	always	12.5
	something	10.0	something	10.0
	someone	06.3	all the time	08.8
Sour	still good	25.0	sweet	32.5
	bitter	10.0	good	10.0
	lemon	10.0	lemon	10.0
Square	shape	15.0	round	35.0
	black	10.0	circle	11.3
	box	10.0	box	08.8
Swift	with	06.3	switch	05.0
	whip	05.0	broom	03.8
	no response	03.8	no response	03.8
Table	chair	61.3	chair	70.0
	desk	06.3	chairs	02.5
	eat	03.8	cloth	02.5
Tall	short	35.0	short	57.5
	small	17.5	small	16.3
	call	05.0	big	03.8
Tell	well	08.8	me	12.5
	talk	07.5	told	08.8
	don't tell	06.3	don't tell	06.3
Them	they	23.8	they	17.5
	him	13.8	him	12.5
	me	05.0	us	07.5
They	them	18.8	them	28.8
	him	06.3	their	06.3
	their	05.0	her	05.0

Third Grade

Stimulus Word	Response (Negro)		Response (white)	
Thirsty	water	45.0	water	25.0
	drink	20.0	hungry	23.8
	hungry	08.8	drink	20.0
Up	down	91.3	down	88.8
	carry somebody	01.3	cup	01.3
	hup	01.3	dog	01.3
Us	you	25.0	you	28.8
	we	13.8	we	11.3
	them	11.3	them	07.5
Usually	always	06.3	sometimes	10.0
	sometimes	06.3	unusually	10.0
	you	06.3	always	07.5
Wild	animal	10.0	animal	10.0
	beast	06.3	nice	07.5
	mild	06.3	now wild	07.5
Wing	fly	27.5	fly	28.8
	bird	17.5	bird	20.0
	we	03.8	sing	03.8
Yellow	green	17.5	white	17.5
	blue	13.8	black	16.3
	black	07.5	blue	13.8

Appendix B

Three Most Popular Responses in Percentages for Fifth Graders

Stimulus Word	Response (Negro)		Response (white)	
Add	subtract	71.3	subtract	60.8
	arithmetic	05.0	arithmetic	06.3
	example	02.5	take away	03.8
Allow	soft	06.3	let	06.3
	come	05.0	noisy	05.1
	not	03.8	permission	05.1
Always	sometimes	13.8	all the time	15.2
	never	08.8	never	12.7
	sometime	06.3	sometimes	12.7
Because	cause	08.8	why	07.6
	no response	05.0	reason	06.3
	someone	05.0	became	03.8
Bee	insect	17.5	honey	19.0
	fly	13.8	sting	16.5
	butterfly	10.0	fly	11.4
Begin	end	28.8	start	32.9
	start	22.5	end	16.5
	finish	06.3	began	08.9
Belong	yours	11.3	mine	10.1
	to	06.3	yours	10.1
	someone	05.0	to	08.9
Between	middle	30.0	middle	34.2
	together	06.3	in the middle	06.3
	side	05.0	together	06.3
Bird	fly	32.5	fly	38.0
	animal	11.3	animal	05.1
	nest	10.0	cat	05.1
Bitter	sour	43.8	sour	31.6
	sweet	22.5	sweet	22.8
	taste	06.3	awful	03.8

Fifth Grade

Stimulus Word	Response (Negro)		Response (white)	
Black	white	65.0	white	78.5
	color	07.5	color	07.6
	dark	07.5	dark	05.1
Bright	light	36.3	dark	40.5
	dark	31.3	light	21.5
	smart	05.0	smart	07.6
Bug	insect	50.0	insect	63.3
	ant	08.8	fly	11.4
	bee	07.5	ant	05.1
Butterfly	insect	40.0	fly	19.0
	fly	18.8	insect	17.7
	caterpillar	06.3	cocoon	15.2
Carry	hold	10.0	hold	22.8
	walk	08.8	drop	12.7
	bring	06.3	walk	10.1
Chair	table	28.8	table	35.4
	sit	20.0	disk	20.3
	desk	15.0	sit	16.5
Clean	dirty	60.0	dirty	77.2
	neat	05.0	bath	03.8
	wash	05.0	clear	03.8
Cocoon	animal	20.0	butterfly	19.0
	raccoon	13.8	animal	15.2
	butterfly	12.5	caterpillar	13.9
Cold	hot	50.0	hot	62.0
	warm	42.5	warm	26.6
	cool	01.3	freezing	03.8
Color	red	26.8	red	25.3
	blue	11.3	blue	10.1
	orange	07.5	white	08.9
Dark	light	76.3	light	81.0
	night	07.5	black	05.1
	black	06.3	night	05.1

Fifth Grade

Stimulus Word	Response (Negro)		Response (white)	
Deceive	receive	20.0	receive	17.7
	give	10.0	no response	10.1
	no response	07.5	give	06.3
Enjoy	fun	13.8	happy	30.4
	happy	13.8	fun	16.5
	like	07.5	like	11.4
Examine	x-ray	15.0	test	15.2
	operate	13.8	doctor	12.7
	doctor	10.0	x-ray	12.7
Flower	plant	13.8	rose	21.5
	rose	12.5	garden	10.1
	grass	08.8	plant	08.9
Fly	insect	22.5	walk	24.1
	walk	12.5	insect	13.9
	bird	07.5	bird	11.4
Fruit	apple	31.3	apple	30.4
	vegetable	17.5	vegetable	17.7
	orange	16.3	orange	10.1
Gallop	horse	30.0	horse	45.6
	run	18.8	trot	12.7
	ride	12.5	run	11.4
Gently	soft	31.3	soft	32.9
	kind	10.0	kind	07.6
	smooth	07.5	easy	06.3
Give	gave	22.5	take	45.6
	take	17.5	gave	13.9
	receive	10.0	got	03.8
Hand	finger	22.5	arm	43.0
	arm	18.8	fingers	10.1
	body	12.5	finger	05.1
Happen	accident	05.0	accident	05.1
	before	05.0	before	03.8
	today	05.0	did	03.8

Fifth Grade

Stimulus Word	Response (Negro)		Response (white)	
Hard	soft	72.5	soft	69.6
	easy	07.5	easy	12.7
	solid	02.5	smooth	03.8
He	her	41.3	her	57.0
	she	22.5	she	17.7
	him	13.8	him	08.9
Her	him	46.8	him	65.8
	she	31.3	she	11.4
	he	07.5	he	07.6
High	low	68.8	low	79.7
	up	03.8	bye	02.5
	bye	02.5	good-bye	02.5
Him	her	88.8	her	72.2
	he	06.3	boy	03.8
	she	06.3	girl	03.8
Inquire	no response	10.0	no response	07.6
	paper	05.0	sing	06.3
	sing	05.0	music	05.1
Insect	bug	36.8	bug	46.8
	animal	16.3	fly	11.4
	fly	10.0	animal	08.9
Into	out	50.0	out	44.3
	enter	06.3	out of	08.9
	in	06.3	to	05.1
It	is	28.8	is	30.4
	not	07.5	that	13.9
	something	06.3	thing	12.7
Join	together	32.5	together	29.1
	hands	06.3	club	07.6
	unjoin	05.0	fun	06.3
Listen	hear	33.8	hear	27.8
	quiet	10.0	quiet	16.5
	heard	06.3	learn	07.6

Fifth Grade

Stimulus Word	Response (Negro)		Response (white)	
Long	short	85.0	short	75.9
	sort	03.8	tall	03.8
	grass	02.5	grass	02.5
Loud	soft	36.3	soft	43.0
	low	16.3	low	22.8
	quiet	13.8	quiet	07.6
Loudly	softly	27.5	softly	38.0
	quiet	10.0	low	10.1
	quietly	10.0	lowly	08.9
Maintain	no response	08.8	no response	10.1
	tain	06.3	keep	05.1
	stay	05.0	entertain	02.5
Man	woman	62.5	woman	64.6
	boy	06.3	boy	08.9
	lady	06.3	lady	05.1
Mix	cake	12.5	stir	13.9
	fix	10.0	cake	12.7
	stir	08.8	together	11.4
Moth	insect	27.5	butterfly	26.6
	butterfly	18.8	insect	12.7
	ball	08.8	bug	11.4
Move	stay	11.3	stay	15.2
	still	10.0	still	12.7
	walk	08.8	go	08.9
Music	song	22.5	sing	17.7
	instrument	08.8	song	15.2
	dance	05.0	art	08.9
Needle	thread	33.8	thread	48.1
	pin	15.0	pin	16.5
	sew	13.8	sew	07.6
Net	fish	28.8	fish	31.6
	catch	10.0	catch	10.1
	sew	03.8	hair	07.6

Fifth Grade

Stimulus Word	Response (Negro)		Response (white)	
Never	ever	23.8	ever	16.5
	always	20.0	always	12.7
	again	08.8	now	07.6
Obey	disobey	18.8	disobey	16.5
	mind	12.5	listen	13.9
	rules	05.0	command	05.1
Ocean	sea	35.0	sea	41.8
	river	30.0	water	22.8
	water	15.0	river	20.3
Off	on	92.5	on	93.7
	in	02.5	foot	01.3
	cut TV off	01.3	get	01.3
On	off	76.8	off	83.5
	top	05.0	top	03.8
	still	02.5	out	02.5
Once	twice	43.8	twice	51.9
	again	06.3	one	03.8
	upon	05.0	upon	03.8
Pleasant	nice	15.0	nice	13.9
	happy	11.3	happy	12.7
	unpleasant	11.3	unpleasant	12.7
Prepare	ready	22.5	ready	34.2
	fix	17.5	fix	16.5
	unprepare	06.3	dinner	03.8
Pretty	ugly	47.5	ugly	65.8
	beautiful	28.8	beautiful	16.5
	cute	08.8	cute	05.1
Quiet	loud	35.0	noisy	36.7
	noisy	31.3	loud	35.4
	soft	08.8	noise	08.9
Restore	keep	11.3	put away	17.7
	put away	11.3	keep	07.6
	store	10.0	save	07.6

Fifth Grade

Stimulus Word	Response (Negro)		Response (white)	
River	lake	26.8	stream	22.8
	ocean	18.8	water	21.5
	water	17.5	lake	19.0
Rough	tough	41.3	soft	27.8
	hard	11.3	smooth	22.8
	soft	10.0	hard	13.9
Run	walk	48.8	walk	45.6
	ran	10.0	fast	08.9
	fast	08.8	ran	08.9
Sad	happy	72.5	happy	69.6
	glad	13.8	glad	10.1
	unhappy	06.3	mad	03.8
Salt	pepper	52.5	pepper	58.2
	sugar	11.3	sugar	06.3
	food	07.5	water	05.1
Seldom	often	11.3	often	13.9
	no response	05.0	no response	07.6
	always	03.8	sell	06.3
Sell	buy	41.3	buy	31.6
	sold	07.5	sold	19.0
	sale	05.0	give	03.8
She	her	32.5	him	32.9
	he	28.8	he	30.4
	him	28.8	her	25.3
Sheep	lamb	40.0	lamb	29.1
	animal	17.5	dog	17.7
	goat	08.8	animal	11.4
Short	long	45.0	long	63.3
	tall	36.3	tall	12.7
	small	07.5	small	10.1
Since	money	08.8	then	13.9
	when	06.3	yesterday	06.3
	yesterday	06.3	before	05.1

Fifth Grade

Stimulus Word	Response (Negro)		Response (white)	
Sit	stand	43.8	stand	46.8
	down	18.8	down	16.5
	chair	12.5	sat	15.2
Slow	fast	95.0	fast	88.6
	fact	01.3	walk	05.1
	fun	01.3	ice	01.3
Slowly	fast	63.8	fast	60.8
	fastly	11.3	fastly	16.5
	faster	05.0	slow	02.5
Smooth	rough	30.0	rough	40.5
	soft	27.5	soft	25.3
	hard	05.0	hard	13.9
Sometimes	all the time	18.8	all the time	16.5
	always	13.8	always	16.5
	something	07.5	something	07.6
Sour	bitter	45.0	sweet	48.1
	sweet	30.0	bitter	24.1
	lemon	06.3	lemon	08.9
Square	round	26.8	round	35.4
	block	23.8	circle	15.2
	circle	21.3	triangle	11.4
Swift	fast	28.8	fast	31.6
	smooth	06.3	smooth	05.1
	no response	05.0	kick	03.8
Table	chair	72.5	chair	75.9
	disk	07.5	disk	06.3
	cloth	05.0	chairs	03.8
Tall	short	71.3	short	73.4
	small	06.3	small	06.3
	long	05.0	long	03.8
Tell	ask	17.5	talk	22.8
	talk	12.5	told	11.4
	story	07.5	speak	05.1

Fifth Grade

Stimulus Word	Response (Negro)		Response (white)	
Them	they	28.8	they	21.5
	us	22.5	us	17.7
	him	07.5	their	07.6
They	them	43.8	them	49.4
	their	08.8	us	10.1
	us	07.5	we	07.6
Thirsty	water	45.0	water	36.7
	hungry	15.1	drink	21.5
	drink	13.8	hungry	17.7
Up	down	92.5	down	92.4
	above	01.3	climbed	01.3
	blow	01.3	far	01.3
Us	we	21.3	you	36.7
	you	21.3	we	16.5
	me	08.8	me	08.9
Usually	always	12.5	sometimes	11.4
	unusually	11.3	often	10.1
	sometimes	08.8	unusually	07.6
Wild	tame	13.8	tame	25.3
	animal	11.3	animal	11.4
	beast	08.8	gentle	05.1
Wing	fly	38.8	fly	36.7
	bird	20.0	bird	27.8
	feather	10.0	airplane	05.1
Yellow	color	25.0	color	16.5
	red	10.0	red	13.9
	black	08.8	blue	12.7

Appendix C

Rotated Factor Loadings for "Butterfly" Words at Four Age Levels for Negro and White Slum Children (greater than .09 in absolute value)

FACTOR I (flight)

	K		Grade 1		Grade 3		Grade 5	
	Negro	White	Negro	White	Negro	White	Negro	White
Bee		.12	.20		.17	.14	.12	.15
Bird	.58	.65	.58	.73	.65	.71	.73	.76
Black								
Bright								
Bug	.12			.13		.13		
Butterfly	.53	.66	.62	.54	.49	.54	.22	.26
Cocoon								-.13
Color								
Flower	.11							
Fly	.66	.67	.64	.64	.55	.49	.60	.58
Insect								
Moth								
Pretty								
Wing	.47	.51	.55	.60	.69	.73	.75	.77
Yellow								

FACTOR II (bugs)

Bee	-.11	.47	.23	.21	.33	.16	.53	.31
Bird	-.15		-.10					
Black	.16	-.16						
Bright				.17				
Bug	.60	.63	.71	.65	.78	.77	.79	.87
Butterfly	.14		.12	.14	.32	.13	.52	.18
Cocoon								-.19
Color								
Flower	.25							
Fly	.11		.13		.15	.21	.30	.19
Insect	.70	.63	.71	.79	.78	.80	.79	.87
Moth	.25	.18				.12	.32	.22
Pretty			-.10	.12				
Wing								
Yellow								

FACTOR III (lepidoptera)

Bee	.34	.53	.23	.31
Bird				
Black				
Bright				
Bug		.11	-.10	
Butterfly	.23	.41	.41	.66
Cocoon	.69	.59	.81	.70
Color				
Flower		.12		
Fly	.14	.19	.12	.20
Insect				
Moth	.64	.61	.57	.64
Pretty				
Wing				
Yellow				

FACTOR IV (color)

Bee								
Bird								
Black	.14		.56	.63	.59	.60	.48	.50
Bright	.51	.26			.18		.13	.29
Bug								
Butterfly								
Cocoon								
Color	.53	.71	.65	.59	.64	.59	.67	.67
Flower								
Fly								
Insect								
Moth	.11							
Pretty							-.07	
Wing	.12							
Yellow	.67	.71	.63	.62	.65	.68	.73	.67

FACTOR V (prettiness and residual)

Bee			.12					
Bird								
Black	.05	-.06	.05	-.10	.001	-.06	.04	-.14
Bright	-.23	-.31	.10	.58	.42	.41	.55	.22
Bug								
Butterfly								
Cocoon		-.21	-.11					
Color				.10				
Flower	.36	.31	.52	.40	.55	.61	.48	.67
Fly								
Insect								
Moth			.50					
Pretty	.83	.86	.65	.70	.73	.68	.69	.69
Wing								
Yellow								